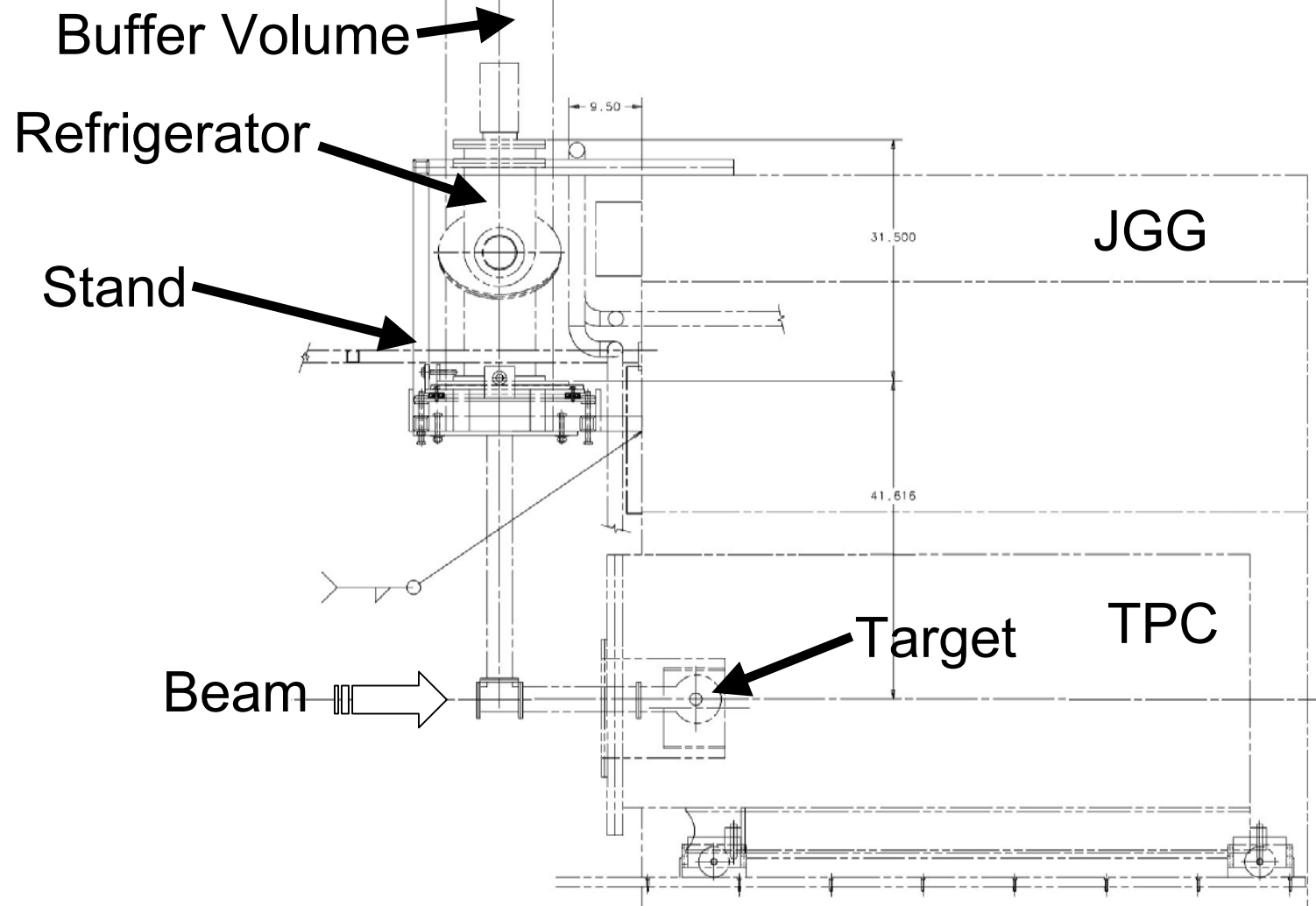
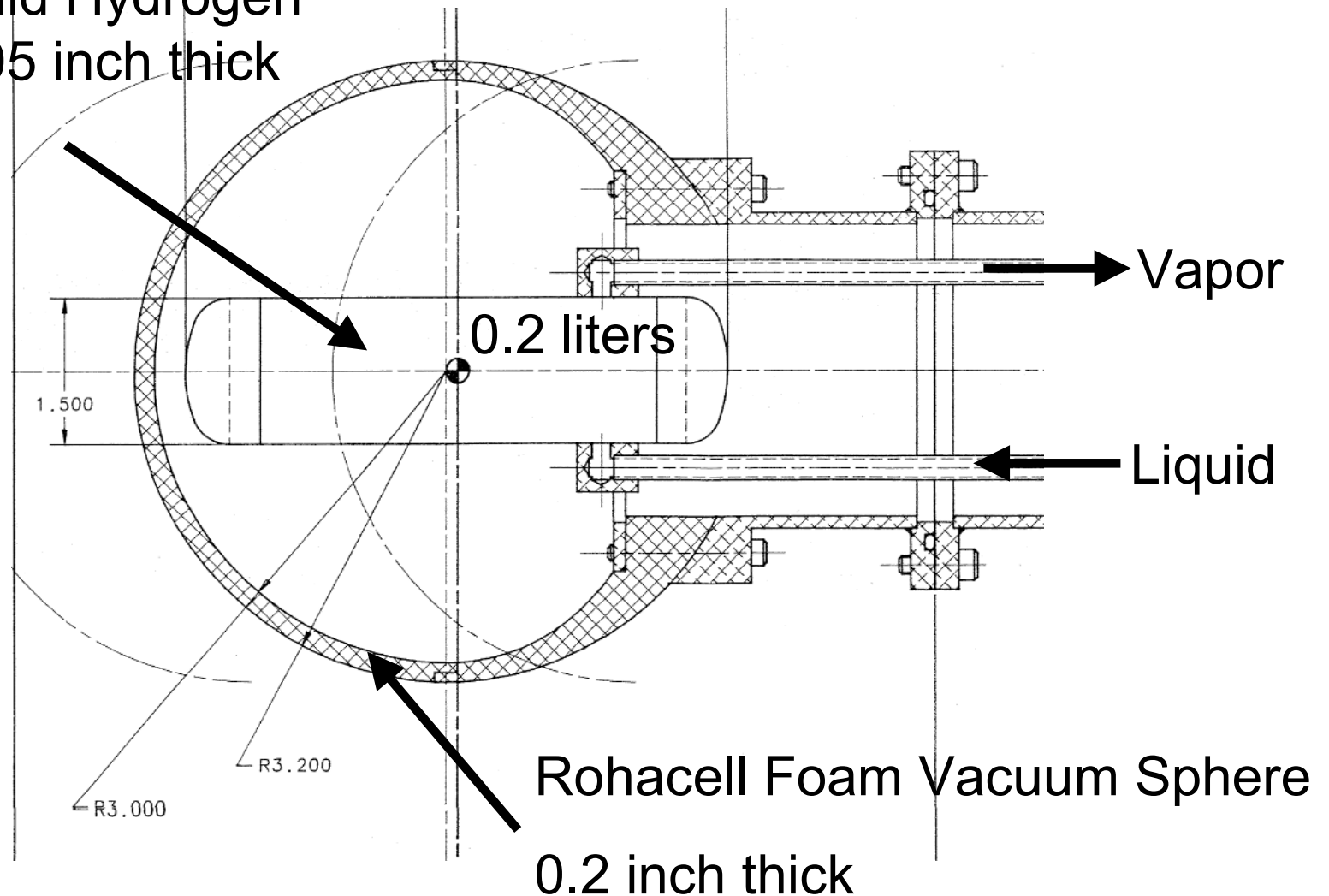


# Hydrogen Target Layout

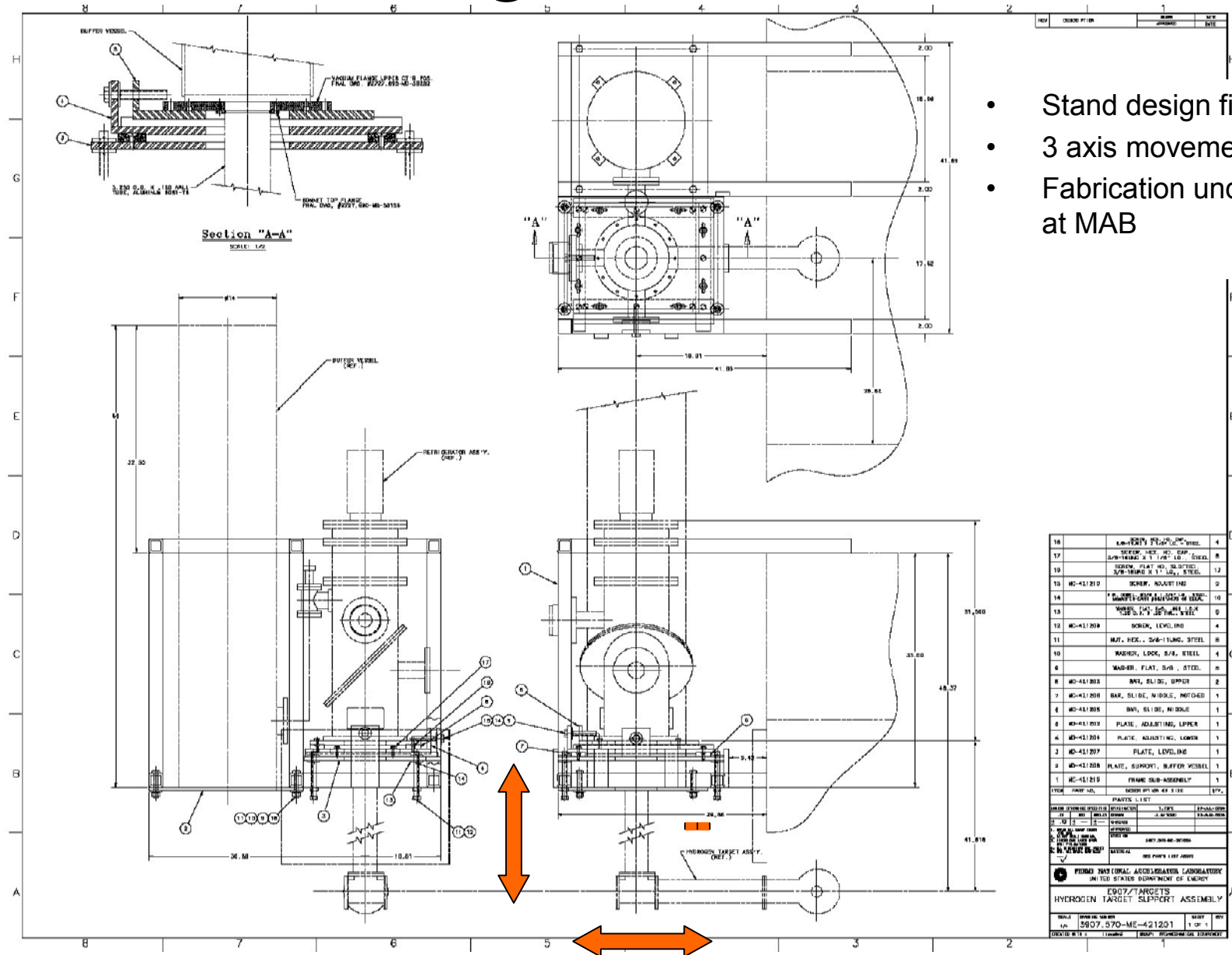


# Hydrogen Flask & Vacuum Sphere

Mylar Liquid Hydrogen  
Flask 0.005 inch thick



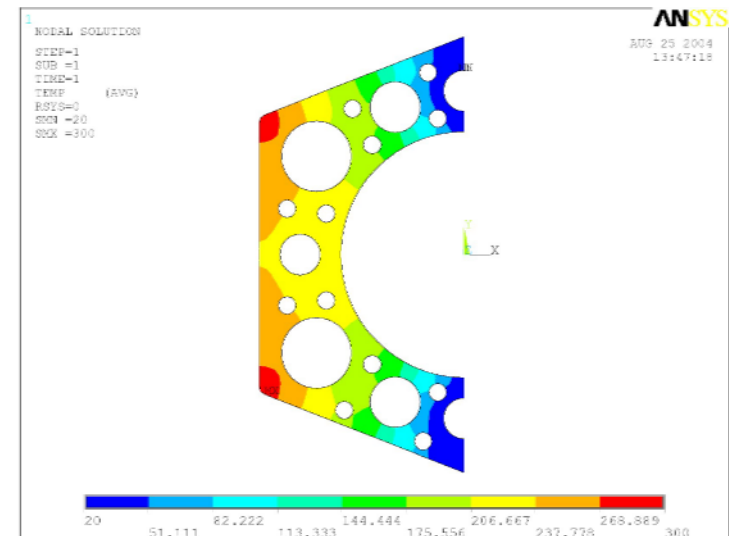
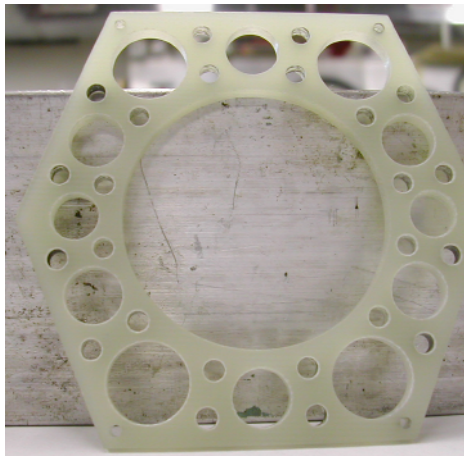
# Target Stand



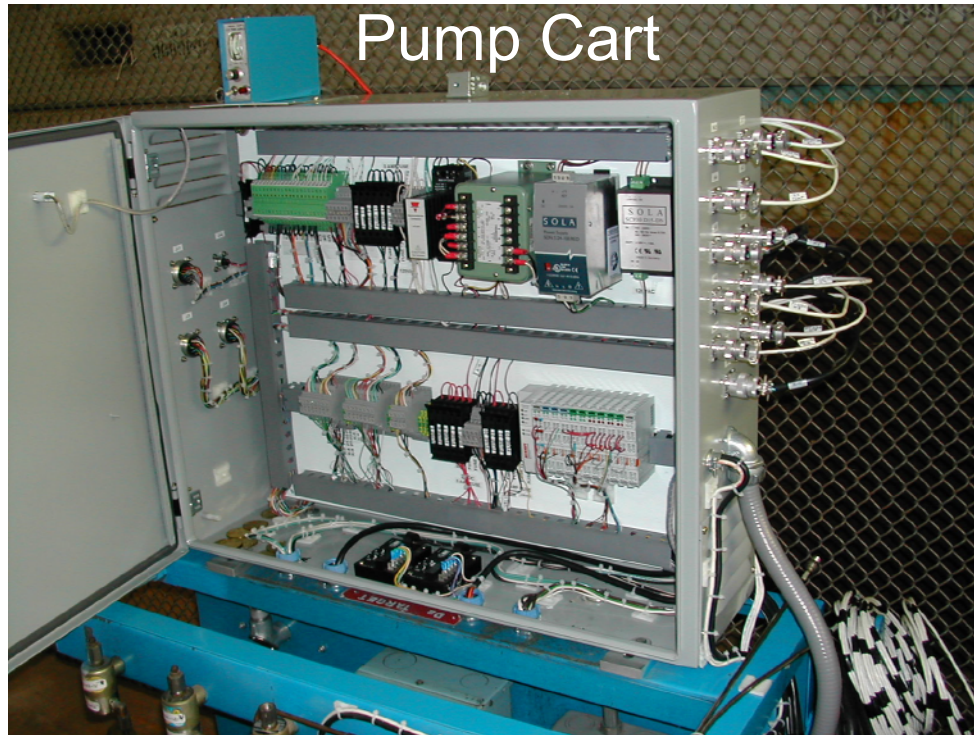
- Stand design finished
- 3 axis movement
- Fabrication underway at MAB

# Transfer Line

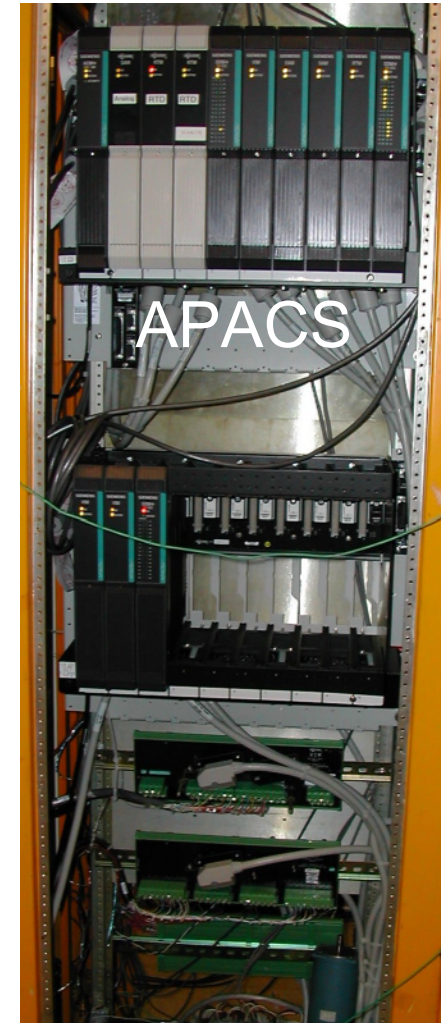
- When stand design was done, length of transfer line was known and fabrication has begun
- E690 cryo standoffs did not match prints
  - Design was poor due to large conduction area
  - Possible they had bubbles in flask
- New design analyzed with ANSYS FEA
  - Should be much less heat leak



# Controls Wiring

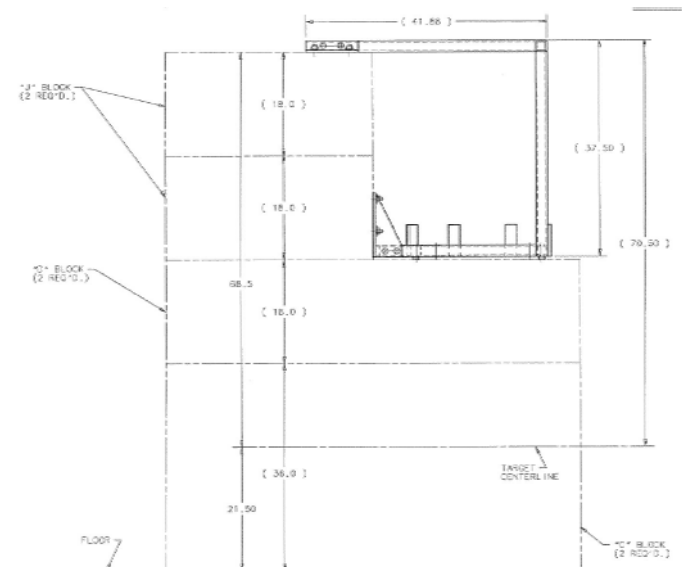


- Pump cart electrical box has all power supplies, relays, fuses, etc. for target controls
- Vacuum pumps, solenoid valves, pressure and temperature instrumentation is all wired into APACS and ready for testing



# Safety Documentation

- Safety report (117 pages!) has been submitted to panel chaired by Jim Kilmer
  - No negative feedback so far
  - I've kept them informed of all testing and piping plans I make

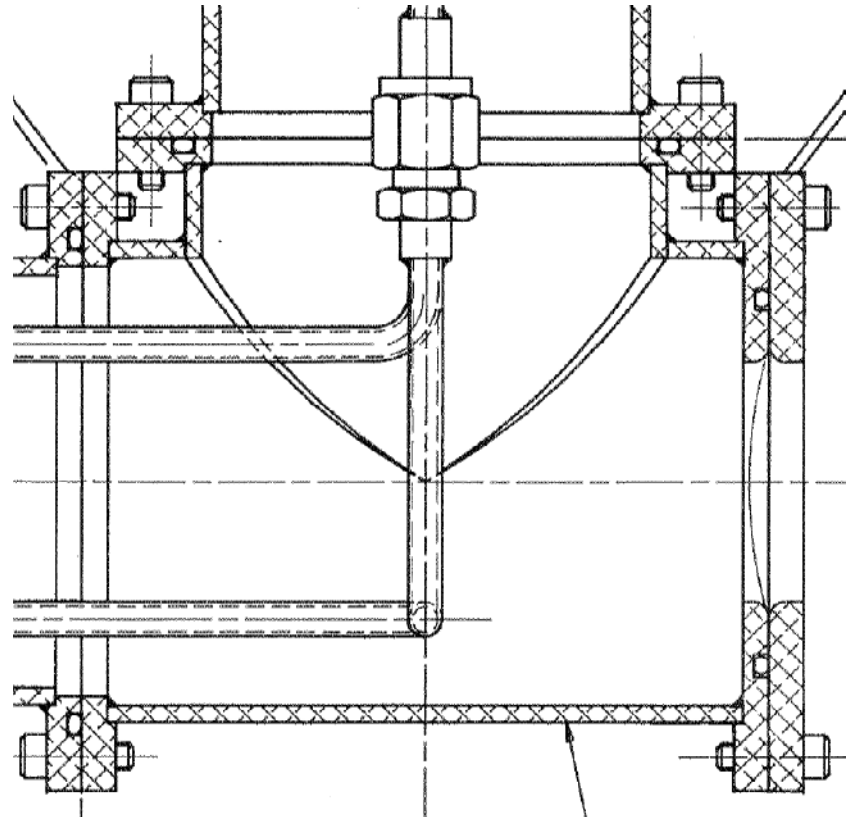
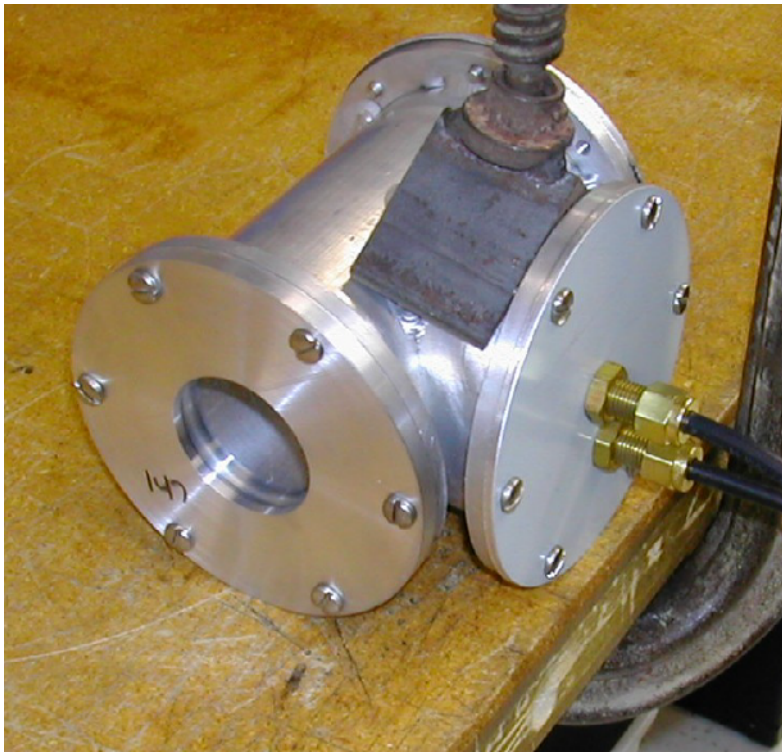


Meson Detector  
Building Test Setup



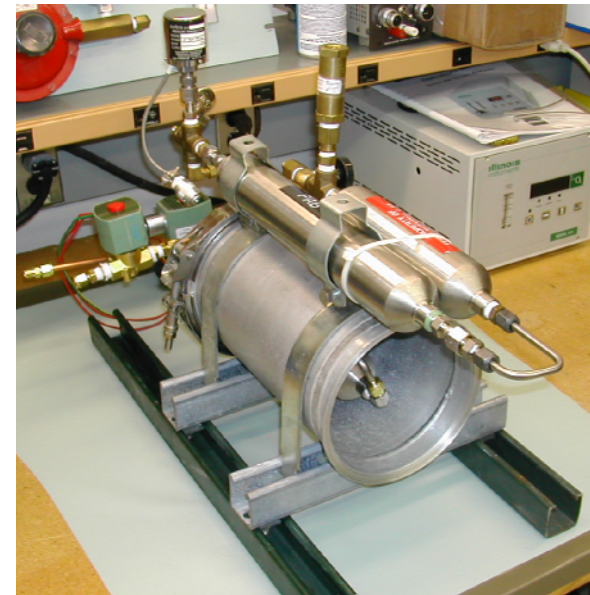
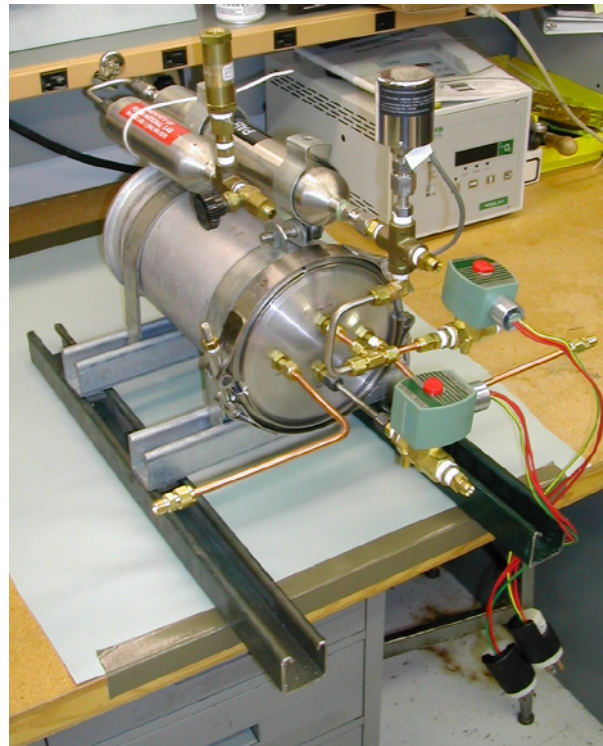
# Safety Testing

- Mylar windows
  - Must burst 5 windows at  $> 37.5$  PSID
  - Our test windows have survived 100 PSID

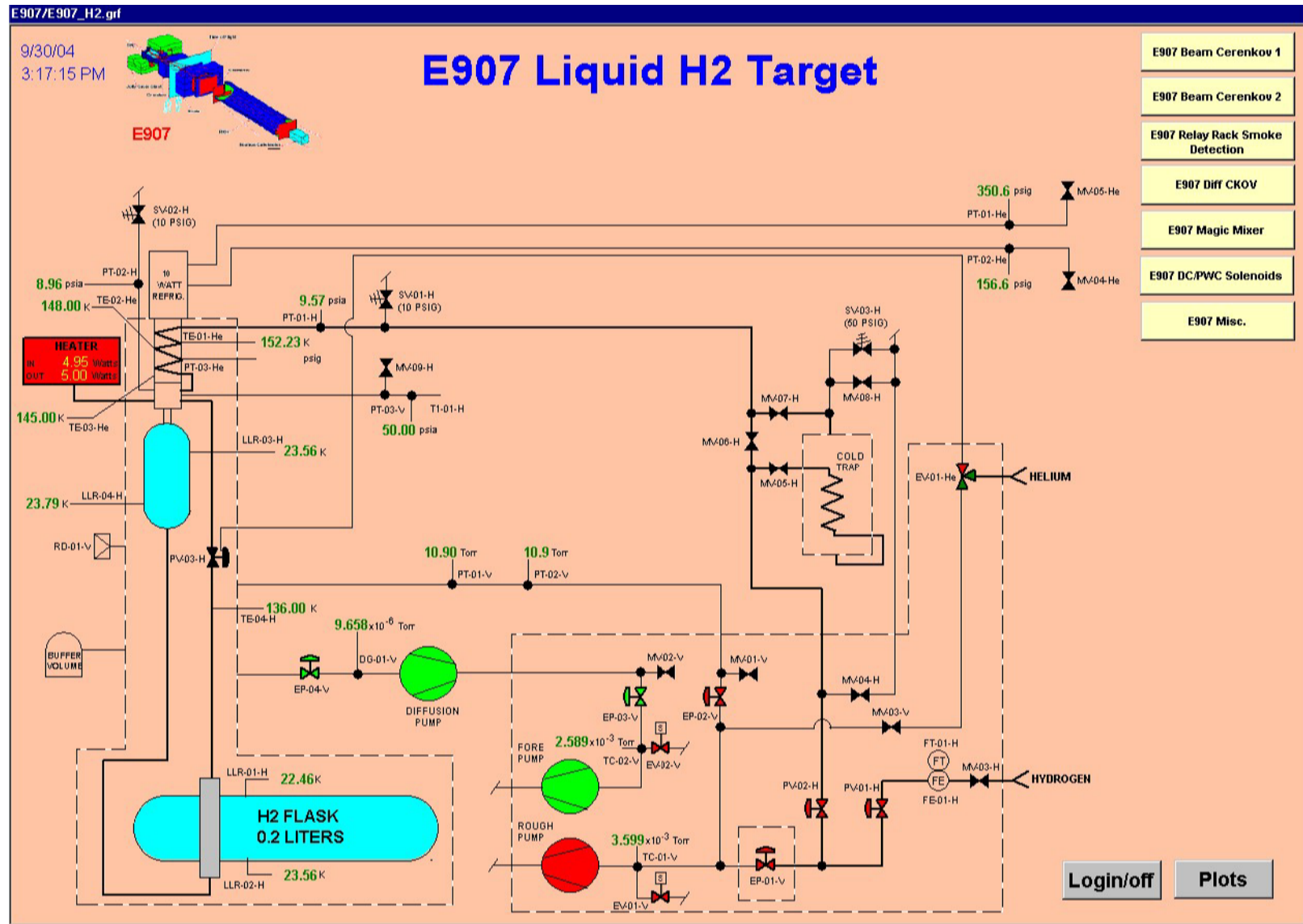


# Safety Testing

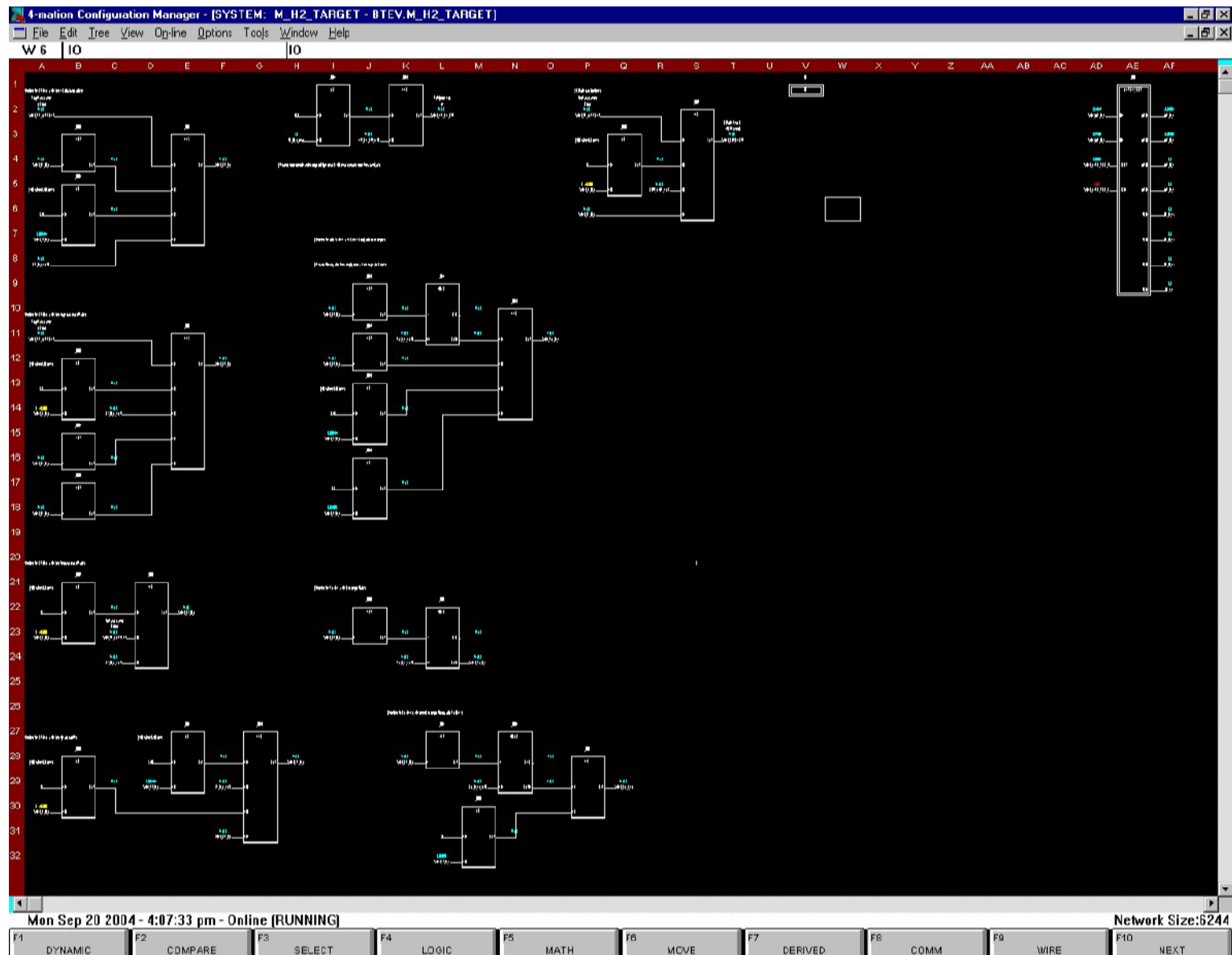
- Flask Cold burst test
  - Built test fixture to use LN2 to burst flask
  - Will test readout of carbon flask resistors



# iFIX H2 GUI



# APACS Programming



# Controls Programming

- Interlocks are programmed in APACS
  - Need to be reviewed by another engineer for safety committee
- First evolution of iFIX picture is done
- Need to finish APACS process programming for target startup/shutdown and corresponding iFIX additions.
- Experiment will have permission to fill/empty flask
- Only experts can start up or shut down target

# Major Tasks Accomplished Since June

- Stand design finished, fabrication started
- Pump cart and all other target components wired to APACS
- Safety document submitted
- Testing area agreed upon
- Signal cables pulled from MC7 to MTEST
- Interlocks programmed in APACS
- Large portion of iFIX GUI done

# Major Tasks Left

- Complete stand fabrication (MAB)
- Complete transfer line fabrication (PAB)
- Install supply/exhaust lines (New Muon)
- Finish process programming (Tope)
- Finish iFIX GUI (Tope & Markley)
- Install final assembly and test at MDB  
then move to MC7 (Lambin & Tope)